**SUBJ:** ATS PERFORMANCE MEASUREMENT SYSTEM

1. PURPOSE. This Order implements the ATS Performance Measurement System (PMS) at specified terminals. The PMS, by design, provides timely operational data, system performance indicators, and identifies areas needing attention to enhance system performance.

2. DISTRIBUTION. This Order is distributed to Air Traffic, Airway Facilities and Flight Standards at branch level and above in Washington and Regional Offices; Air Route Traffic Control Centers, Airport Traffic Control Towers, RAPCONs, RATCCs and TRACONs.

3. EFFECTIVE DATE. December 1, 1975.

4. BACKGROUND. The PMS Program was developed to provide information to system managers concerning the overall performance at designated airports and to identify the actions needed to improve service. The forwarding of dynamic operational data, such as actual performance, will be used by the ATC Systems Command Center for flow control management purposes. The basis for the PMS is the comparison of actual runway operations and Engineered Performance Standards (EPS), or runway capacity, during the hours when user demand equals or exceeds capacity and/or delays are being encountered. EPS is the number of operations that can be handled in one hour for a given runway configuration and weather conditions. Values are based on facility experience and current AT procedures. The PMS Program was prototyped and initially implemented at six terminals.

5. TERMS AND DEFINITIONS.

   a. Engineered Performance Standard (EPS) - The number of operations that can be handled in an hour for a given runway configuration and weather conditions. The standard assumes that arrivals and departures are equal, that local aircraft mix is present and that normal AT procedures are in effect.

   b. Measurement Hour - Any hour in which the modified demand equals or exceeds 95% EPS.

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**Initiated By:** AAT-370

outlined in the PMS Form, must be collected for each PMS facility: Usually twelve consecutive hours.

e. Performance Index (PI) - The rates of actual operations to EPS when the demand is equal to or greater than 95% of the EPS.

6. PROCEDURES AND RESPONSIBILITIES.

a. Designated PMS terminal facilities are divided into two groups, A and B (see Appendix 1). Each PMS facility shall:

(1) On a daily basis, record operational data specified in the PMS Summary Form, FAA Form 7200-1 (Appendix 2).

(2) Forward a copy of the PMS Summary Form to the respective regional air traffic division on a daily basis. (RIS: AT 7200-1)

(3) Advise ATCSCC of runway configuration and all subsequent changes during collection hours.

(4) Provide the ATCSCC, as soon as practical after request, the following data:

(a) Number of actual arrivals.

(b) Number of actual departures.

(c) Actual general aviation and military operations by arrivals and departures.

(d) Number of actual IFR and VFR operations (helicopters are excluded).

(e) Number of departure aircraft delayed and the average delay being experienced. Include in the PMS Summary Form arrival delay information when received from the associated ARTCC, Tracon and/or the ATCSCC.

(f) Specific factors causing delays (Appendix 2).

Note: The above data can be extracted from the PMS Summary Form, Columns 4-6-8-10-11.

compile and forward to ATCSCC a summary of the measurement hours extracted from the following PMS Form items.

(a) Daily Performance Index (DPI).

(b) Total EPS (for measurement hours only).

(c) Total operations (measurement hours only).

b. ARTCCs and approach control facilities shall provide arrival delay information to the PMS facilities upon request.

c. Regional Air Traffic Divisions shall:

(1) Review and analyze the PMS Summary Form on a daily basis.

(2) Identify areas needing attention to enhance system performance and initiate action, as appropriate.

(3) Forward to AAT-10, ATTN: AAT-12, completed PMS Summary Forms as follows: (RIS: AT 7200-1)

(a) For Group A facilities, on a weekly basis, all completed forms for each previous week.

(b) For Group B facilities, on a quarterly basis, all completed forms for only the first week of each quarter.

(4) Forward to the Air Traffic Service, ATTN: AAT-300/INFO AAT-12 information concerning any planned airport construction and any other factors that will reduce/improve runway capacity (EPS) and any planned procedures to be implemented as a result.

d. The ATC Systems Command Center shall:

(1) Provide regions and PMS terminal facilities the hourly demand data obtained from the Official Airline Guide (OAG) on a monthly basis.

(2) Plan, coordinate and implement timely flow control actions based on the PMS information received.

(1) Develop, maintain and distribute the EPS values.

(2) Assess PMS effectiveness and identify trends to reflect current needs for enhancement.

(3) Present to AAT-1 periodic (monthly/quarterly) assessments of systems performance and areas needing improvements, as required.

7. MISCELLANEOUS.

a. The regional air traffic divisions, the associated PMS facilities designated by group letter (A or B), and the respective collection hours are identified in Appendix 1.

b. EPS values shall be transmitted in a separate memorandum.

c. Detailed instructions for preparing the daily PMS Summary Form are outlined in Appendix 3.

d. ATCSCC may be reached either through the CFC circuit or FTS 8-202-426-3797.

8. AVAILABILITY OF FORM. The PMS Summary Form (FAA Form 7200-1) will be stocked at the Depot and is assigned NSN: 0052-00-850-2000(single sheet). The regions will be provided an initial supply for distribution to designated PMS facilities.

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of all information for their respective areas. The associated ARTCC and/or tracon facilities will forward any needed information to the affected facility.

| Region | Terminal Facility | Group | Collection Hours (Local Time) |
|---|---|---|---|
| Central | St. Louis | B | 0800-2059 |
| Great Lakes | Chicago O'Hare | A | 0800-1959 |
| | Cleveland | B | 0800-1959 |
| Eastern | LaGuardia | A | 0700-2059 |
| | J. F. Kennedy | A | 1200-2159 |
| | Newark | B | 0800-2059 |
| | Philadelphia | B | 0800-2059 |
| | Pittsburgh | B | 0800-2059 |
| | Washington National | A | 0800-2159 |
| New England | Boston | B | 0700-1859 |
| Southern | Atlanta | A | 0800-2059 |
| | Miami | B | 1000-2259 |
| Southwest | Dallas/Ft. Worth | B | 0800-2059 |
| Western | Los Angeles | B | 0800-2059 |
| | San Francisco | B | 0800-2059 |
| *Rocky Mountain | Denver | B | 0800-2059 |

*To enter PMS Program at a later date in a subsequent memorandum.

TERMINAL FACILITY ORD

PMS SUMMARY FORM
(RIS: AT 7200-1)

DATE

| 1 | | 2 | 3 | 4 | 5 | 6 | | 7 | | 8 | | 9 | | 10 | | | | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TIME | | | | | | ACTUAL | | OAG SCHED AC/AT | | ACTUAL CA/HIL | | RUNWAY CONFIGURATION | | DELAYS ARR | | DEP | | |
| LOCAL | GMT | PIR | EPS | TOTAL ACTUAL (VFR) | MODIFIED DEMAND | ARR | DEP | ARR | DEP | ARR | DEP | ARR | DEP | MINS | AAC | MINS | AAC | FACTORS RELATED TO PERFORMANCE. CAUSE FOR |
| 0700 | 1200 | | | | | | | | | | | | | | | | | |
| 0800 | 1300 | | | | | | | | | | | | | | | | | |
| 0900 | 1400 | | 137 | 113 (7) | 110 | 55 | 58 | 42 | 52 | 9 | 7 | 9R 9L | 9L 9R | | | | | |
| 1000 | 1500 | | " | 125 (3) | 122 | 60 | 65 | 54 | 62 | 5 | 1 | " | " | | | | | |
| 1100 | 1600 | | " | 98 (0) | 107 | 51 | 47 | 48 | 53 | 2 | 4 | 27R 32L | 27L 32R | | | | | RUNWAY CHANGE WIND CHANGE. |
| 1200 | 1700 | | " | 112 (1) | 108 | 52 | 60 | 52 | 47 | 1 | 8 | " | " | | | | | |
| 1300 | 1800 | 89 | " | 122 (2) | 129 | 63 | 59 | 63 | 60 | 1 | 5 | " | " | | | 15" | 10 | RUNWAY [illegible] REMOTE [illegible] |
| 1400 | 1900 | 87 | " | 120 (3) | 131 | 59 | 61 | 62 | 58 | 5 | 6 | " | " | | | | | Low demand |
| 1500 | 2000 | 98 | " | 135 (3) | 139 | 63 | 72 | 57 | 67 | 8 | 7 | " | " | | | | | |
| 1600 | 2100 | 94 | " | 130 (3) | 130 | 74 | 56 | 67 | 59 | 4 | 6 | " | " | 15" | 12 | | | VOLUME |
| 1700 | 2200 | 104 | " | 143 (2) | 141 | 71 | 72 | 72 | 58 | 4 | 7 | " | " | | | | | |
| 1800 | 2300 | 102 | " | 141 (2) | 143 | 67 | 74 | 66 | 71 | 1 | 5 | " | " | | | | | |
| 1900 | 0000 | | " | 115 (4) | 111 | 59 | 56 | 45 | 60 | 5 | 1 | " | " | | | | | |
| 2000 | 0100 | | " | 108 (1) | 104 | 51 | 57 | 49 | 42 | 6 | 7 | " | " | | | | | |
| 2100 | 0200 | | | | | | | | | | | | " | | | | | |
| 2200 | 0300 | | | | | | | | | | | | | | | | | |

DAILY SUMMARY DATA
Number of Measurement Hours 5
Totals Operations for Measurement Hours 669 (ACTUALS) — 685 (EPS) · 929 (DAILY P.I.) FAA FORM

| 13 | | 14 | |
|---|---|---|---|
| TIME LOCAL | TIME GMT | WEATHER IFR or VFR | WEATHER HOURLY SEQUENCE |
| 0700 | 1200 | | |
| 0800 | 1300 | | |
| 0900 | 1400 | V | 30@50@SH 1609 |
| 1000 | 1500 | V | 30@45@6H 1606 |
| 1100 | 1600 | V | M29@12 2610 |
| 1200 | 1700 | V | M33@15 2405 |
| 1300 | 1800 | V | M33@15 2808 |
| 1400 | 1900 | V | 30@15 2809 |
| 1500 | 2000 | V | 40@15 2710 |
| 1600 | 2100 | | — |
| 1700 | 2200 | V | 50@15 2613 |
| 1800 | 2300 | V | 50@15 3105 |
| 1900 | 0000 | V | 50@15 2605 |
| 2000 | | | |
| 2100 | | | |
| 2200 | | | |

ADDITIONAL REMARKS

**QUICK REFERENCE**

**COLUMN 1..**TIME, local and Greenwich Meantime (GMT)

**COLUMN 2..**Performance Index (PI) a percentage determined by dividing the actual operations by the Engineered Performance Standard (EPS) which coincides with the runway configuration (PI= Column 4 divided by Column 3).

**COLUMN 3..**EPS, Expected Runway capacity (departures and arrivals)

**COLUMN 4..**TOTAL ACTUALS, the number of arrivals and departures including VFR. Also indicate in parenthesis the number of VIR aircraft handled during that hour.

**COLUMN 5..**MODIFIED DEMAND..Official Airline Guide (OAG) Schedule of Air Taxi/Air Carrier (Column 7 AT/AC) plus the Actual General Aviation/Military (column 8 GA/MIL).

**COLUMN 6..**ACTUALS, the actual traffic handled, arrivals and depactures tabulated separately.

**COLUMN 7..**OAG SCHEDL, Scheduled Air Carrier & Air Taxi operations extracted from Official Airline Guide & provided by ATCSCC.

**COLUMN 8..**ACTUAL GA/MIL, the General Aviation & Military operations handled and tabulated separately.

**COLUMN 9..**Runway Configuration, all runways in use (Arrivals/Departures)

**COLUMN 10,**DELAYS, reportable arrival & departure delays (separately tabulated) average number of delay minutes, & number of aircraft delayed.

**COLUMN 11.**FACTORS related to performance & causes for delays. Remarks pertinent to delays or performance. Show cause when PI% is under 95. (See types' of casual factors).

**COLUMN 12,**INITIALS of the employee inserting data.

**COLUMN 13.**TIME, Local and GMT.

**COLUMN 14.**WEATHER, hourly sequence, specify IFR or VFR preceeding the report. Signficant "Special weather reports" affecting the operation should be reflected in additional remarks.

**TYPES OF CAUSAL FACTORS AFFE**
**PERFORMANCE AND/OR DELAYS**

| FACTOR | SPECIFY |
|---|---|
| Weather | Below minimums (tail/cross)fl rwy clsd (snow sanding) thund |
| Construction | Maintenance or causing limita in use. Taxiw |
| Noise | Abatement proc causing runway |
| Airport Saturation | Gates/penalty deptrs given p arrivals. |
| Airspace Saturation | Sector saturat tions or aprec |
| Equipment Outages | FAA equipment (aked or failu Partial outage lar wx conditi restrict oper |
| Aircraft Disruption | User equip pr blown tire, l blocked rwy/t |
| Emergency | Disruption au procedures gi acft in distr |
| Volume | When demand r of capacity a cause applies |
| Unknown | Generally use factor known. Requires foll |
| Other | Specify. |

NOTE: Report "low demand" operations are less EPS with no reporta during measurement

required to report. The following are detailed steps on how to prepare FAA Form 7200-1

Step 1. For each collection hour record OAG scheduled data provided by ATCSCC in Column 7.

Step 2. List hourly facility data. Ensure the data includes actual general aviation and military operations for Column 8 and actual total arrivals and departures for Column 6. Add Column 6 and enter total in Column 4, ensuring that the data entered in Column 4 includes VFR operations in the total and VFR only in parentheses. Add runway configuration, Column 9, reported hourly terminal delay data, Column 10, specific factors related to performances and specific causes for delays, Column 11.

Step 3. Develop modified demand by adding figures in Column 7 and Column 8 (scheduled AC/AT and actual GA/MIL) and enter the sum in Column 5.

Step 4. Record in Column 3 the appropriate selected EPS value for each collection hour, based on runway configuration and weather conditions.

Step 5. Identify performance measurement hours. Analyze the Modified Demand, Column 5, and identify the hours when this demand equals or exceeds 95% of the EPS. These hours are considered performance hours. (When delays equal or exceed 15 minutes in an hour, then performance will also be measured against the EPS. In any delay hour, the causes for delay are required and recorded in Column 11). Indicate the performance measurement hours by circling these hours in Column 1.

Step 6. Calculate hourly performance indices (PI). For performance measurement hours, divide the total operations handled (Column 4) by the corresponding EPS (Column 3) for that hour and multiply the result by 100. Enter the performance index for each measurement hour in Column 2.

below 95% EPS, then supporting cause data is required and should be recorded by the facility in Column 11 of the form.

Step 8. Calculate a Daily Performance Index (DPI). Only the performance measurement hours are used for calculating the daily index. The DPI is calculated by first adding the total operations handled (Column 4) for all performance measurement hours. Add the EPS values (total capacity), Column 3, for these same hours. Place these actual operations and capacity values in the spaces provided at the bottom of the form (Daily Summary). Divide the actual operations sum by the EPS sum and multiply by 100. This resulting percentage is the daily performance index and is recorded. This DPI indicates the percent of the total capacity that was actually used by the facility/user during the performance measurement hours.